

The impact of open access

Between June of 2004 and May of 2005, the number of unique users accessing the *Journal of the Medical Library Association* (JMLA) and its predecessor, the *Bulletin of the Medical Library Association* (BMLA), on the National Library of Medicine's PubMed Central (PMC) system averaged just over 20,000 per month. When I first saw these numbers on the PMC administration site, I was astonished. The members of the Medical Library Association (MLA) itself (who we might presume are the main audience of the JMLA) number only about 4,500, and the print run of the journal is generally in the neighborhood of 5,000 copies. It seemed likely to me that the number of unique readers in any given month would be just some fraction of that core audience.

I thought about that 20,000 figure for a while. It cannot be a count of actual human beings, of course; it has to be a count of individual Internet protocol (IP) addresses. So what does that translate into in terms of individual readers? It must be somewhat less, I thought. When I log in to my campus wireless network, for example, I generally get a different IP address every time, because that network is set up for "dynamic host configuration protocol" (DHCP). That is also the case for most of the commercial Internet service providers. So the 20,000 figure is probably inflated, because the same person might come in several times a month under different IP addresses. I wondered if PMC has some kind of formula that they use to translate the number of IP addresses into number of readers, so I emailed Ed Sequeira, the project coordinator, at PMC. Further astonishment! He pointed out that it was likely that my supposition about DHCP was balanced by the aggregation of users behind corporate firewalls and then told me that, from surveys that they have done, there are half again as many actual users per IP address [1]. *Thirty thousand* unique readers?

Who *are* these people?

One of them, at least, is Barbara Wallraff, who writes the "Word Court" feature in the *Atlantic Monthly*. While reading the June 2004 issue, I was startled to see, in a discussion of the relationship between the caduceus and the staff of Aesculapius, a reference to a 1919 article in the *BMLA* [2]. I emailed Wallraff to verify that she had been able to retrieve it because the entire run was now available on PMC. She replied, "Yes, that's right . . . I *love* the Internet" [3].

Some other clues to readership can be gleaned from looking at the lists of most frequently requested articles. The number 1 article over the 4 years that the JMLA/BMLA has been up on PMC is an article on impact factors from the January 2003 issue [4]. As I write this, in June 2005, that article, which came online in February 2003, has been downloaded 12,409 times. According to ISI's Web of Science, it has been cited 14 times, in such journals as *Human Factors and Ergonomics in Manufacturing*, *Journal of Science and Medicine in Sports*, *Neuroepidemiology*, and *Medicina Clinica*, among others. It is not surprising, given those readership numbers, that the number 1 requested article is one whose subject is not exclusive to health sciences libraries but is considerably important to the larger scientific community. (Huth's letter [5] and Frank's editorial [6] on impact factors are also in the top ten.) Similarly, the number 3 article, an investigation of the impact of online journals on print journal usage (13,513 downloads) [7], while more library related, has implications far beyond the health sciences.

Our core readership, of course, is well represented. The number two article is one of the Brandon/Hill lists [8], and the number four is the 2002 edition of the standards for hospital libraries [9]. Some of the other topics covered in the top twenty-five include evidence-based practice (including evidence-based

librarianship), Website design, consumer health, and medical education.

I can think of few things more likely to gladden the heart of an editor than this kind of evidence of the reach and impact of the journal on which he lavishes so much time and attention. I have no doubt that we would not be seeing these sorts of numbers if the JMLA were not freely available on the Web. From the standpoint of readership and reach, MLA's experiment with open access would appear to be a resounding success.

But much of the discussion of open access during the past few years has focused on the risks. What of those? I started looking into this several months ago, when I was asked to do a presentation on the impact that making its journal open access has had on MLA. Although I think that many members tend to forget the fact, MLA is typical of many small scholarly societies. We are an educational organization, we are an advocacy organization, and we are a publisher. While the publishing program is not MLA's primary activity, it is not insignificant either. The JMLA pays for itself through advertising and nonmember subscriptions and, in fact, manages to return several tens of thousands of dollars annually in "excess revenue" (what commercial organizations refer to as "profit") to the MLA treasury to be used for other member services.

The degree to which scholarly societies depend on revenue from their publishing programs varies widely. For some societies, it represents the primary source of funds, and, without it, they would have to develop a completely different economic model to continue to support the various educational, research, and advocacy activities in which they engage. These societies harbor the greatest concerns about the implications of open access. MLA, on the other hand, is typical of those societies at the other end of the spectrum, for which the pub-

lishing program accounts for a relatively small (although not insignificant—when you are operating on a shoestring, *no* amount of money is insignificant) portion of overall revenue. While the loss of the *excess* revenue would not cripple the association, it would certainly require some shifting of priorities and put additional pressure on other revenue sources. If open access were to result in a significant loss of the *total* revenue, the very existence of the journal could be imperiled. The risk is not trivial.

So I looked at the revenue and membership figures for the last ten years. I wanted to examine the trend lines and see if anything appeared to change significantly around 2001/02, when the *JMLA* went up on PMC. Obviously, many factors are involved in changes from one year to the next, but any major shift in that time period would at least signal a *possible* relationship to the move to open access.

In 1994, total revenue from subscriptions and advertising was \$177,600, with subscriptions accounting for 70%. Revenue peaked in 2002, at \$200,600, and, during that time, the proportions had undergone a gradual shift: advertising was now the larger portion at 52%. In 2003, revenue dropped sharply. Advertising revenue held steady, but subscription revenue dropped by 20%. Subscriptions had been falling for a decade, but the drop from 2002 to 2003 was far more dramatic than the previous declines. The number of subscriptions declined again in 2004, although not as dramatically, but revenue went up slightly, thanks to a modest rate increase. Whether this indicates a trend or not is still too early to say, but, certainly, it seems logical that those who have made up the subscriber base (interested *enough* in health sciences librarianship to want easy access to the journal, but not so interested that they become members of the association) would be likely to drop those subscriptions in favor of the free online version. It is encouraging that advertising revenue has re-

mained steady; the challenge will be to increase it if the slide in subscription revenue continues.

Subscriptions account for only 10% of the *JMLA* print circulation. Perhaps more worrisome from the standpoint of the long-term health of the association is the impact of an open access journal on the members' willingness to remain members. Here, the results are more encouraging. Total membership has declined during the entire period, but the biggest drop occurred in 2000/01, just *before* the PMC debut. And most of the erosion is accounted for by a steady decline in institutional members, likely caused by the pressures on hospital libraries that have been such a grave matter of concern to all medical librarians during the past two decades. In the past three years, the association has actually seen significant *increases* in the number of individual members. Clearly, health sciences librarians find much more of value in their association than ready access to the *JMLA*.

To probe the views of members further, I worked up a quick online survey. I am not, in general, a fan of online surveys. With too few exceptions, they seem to me to be hastily assembled, then sent to a scattershot audience from which no useful sample characteristics can be determined, ending up with a return rate that is too small to produce any statistically reliable results. My survey exemplified all of these characteristics. Nonetheless, bearing these serious limitations in mind, the results are at least somewhat indicative of what the *JMLA* readers may be thinking.

I sent a link to the survey to the MEDLIB-L and Association of Academic Health Sciences Libraries (AAHSL) discussion lists. At the time (March 2005), approximately 2,000 individuals subscribed to those lists. I received 252 responses. I asked respondents to identify themselves as current or former members, and, for those who were former members, I asked what degree of impact the *JMLA*'s free availability had had on their decision not to renew their member-

ship. Seventeen respondents fit in that category. Fourteen indicated little to no impact, two were neutral, and one indicated that it had had a major impact.

When I asked the current members if the *JMLA*'s free availability would make them more or less likely to renew their membership, 61% indicated that it would have no bearing; but, for 30%, it would make them somewhat to much *more* likely to renew. On the downside, 5% felt that it would make them much *less* likely to renew. My survey did not distinguish between institutional and individual members (part of the sloppy design), so it is difficult to correlate these results with the actual membership figures. The encouraging thing is that many members clearly feel that the free availability of the journal makes association membership more attractive. Whether their enthusiasm will compensate for those members who see it as a reason to cease their membership remains to be seen.

Other questions in my survey indicated that the free availability would make people much more likely to read articles from the older issues and would make potential authors more likely to submit manuscripts. These, of course, are the things that an editor loves to hear.

I did one more survey in my little investigation, sending a few questions to the MLA Board of Directors. "Suppose," I asked the board, "that we do find ourselves unable to continue to fund the publication of the *JMLA* in the present manner? How likely do you think you would be to vote in favor of the following options?" I listed several, giving them a seven-point scale, with number one as "very likely" and number seven as "not at all likely." The option "suspend publication altogether" received nine sevens and one six, a resounding vote in favor of finding a way to continue publishing it. Imposing an embargo or tacking on an additional members' fee likewise had little support. The board showed some support for the notion of eliminating the print version, but,

when you stop to think about it, all of our current revenue is tied to the print version, so we cannot very well get rid of it without identifying a different funding stream altogether. Divert funds from other association programs? Well, maybe MLA will have to go there, the results seem to say.

Board members change every year, and this was not a real vote, so I do not know what will happen if such a vote ever actually comes before the board. But, at least for now, I am encouraged by the clear determination of this board to figure out how to continue to publish the *JMLA* as an open access journal.

These days, I am starting to think ahead to the transition to the next editor, and, as I look back on my tenure, I am very proud that my association took a leadership position in the library community in putting our actions where our values are in regard to expanding access for all. I am inordinately pleased that it happened while I was editor—not that I can take any of the credit for it; that deservedly goes to J. Michael Homan, FMLA, my predecessor as editor, who left that role to become president of the association and, in both capacities,

worked tirelessly to develop a strategy for implementing an electronic presence for the journal; to the members of the MLA board who voted in favor of taking those risks; and to Executive Director Carla J. Funk, CAE, and the rest of the headquarters staff, who understood better than anyone just how much of a risk we were taking.

The jury is still out. Those revenue figures are a concern. We need to keep a very close eye on the membership numbers and make sure that the association continues to provide a broad range of programs and services that meet the many needs of its members. Despite what I said near the beginning of this editorial, it is too early to label the experiment an unqualified success. But has the attempt been worth it so far? I look again at the PMC statistics. Twenty to thirty thousand unique users? Has it been worth it? Oh, yes!

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References

1. SEQUEIRA E. Personal email communication. 28 Jun 2005.
2. GARRISON FH. The use of the caduceus in the insignia of the army medical officer. *Bull Med Libr Assoc* 1919; Oct;9(2):13–6.
3. WALLRAFF B. Personal email communication. 3 Sep 2004.
4. SAHA S, SAINT S, CHRISTAKIS DA. Impact factor: a valid measure of journal quality? *J Med Libr Assoc* 2003; Jan; 91(1):42–6.
5. HUTH EJ. Scope-adjusted impact factor. *J Med Libr Assoc* 2003; Jul;91(3):285.
6. FRANK M. Impact factors: arbiter of excellence? *J Med Libr Assoc* 2003; Jan; 91(1):4–6.
7. DEGROOTE SL, DORSCH JL. Online journals: impact on print journal usage. *Bull Med Libr Assoc* 2001; Oct;89(4): 372–8.
8. HILL DR, STICKELL HN. Brandon/Hill selected list of print books and journals for the small medical library. *Bull Med Libr Assoc* 2001; Apr;89(2):131–53.
9. GLUCK JC, HASSIG RA, BALOGH L, BANDY M, DOYLE JD, KRONENFELD MR, LINDNER KL, MURRAY K, PETERSEN J, RAND DC. Standards for hospital libraries 2002. *J Med Libr Assoc* 2002; Oct;90(4):465–72.